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AMSAT NEWS SERVICE
ANS-101

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to: ans-editor(a)amsat.org

You can sign up for free e-mail delivery of the AMSAT News Service Bulletins via the ANS List; to join this list see: https://mailman.amsat.org/postorius/lists/ans.amsat.org/

In this edition:

* ARISS-USA Now a Non-profit Organization
* Contests On QO-100 Allowed In Time For Yuri Gagarin Contest
* Fun While It Lasted, Falcon 9 Telemetry Now Encrypted
* AMSAT SA Call For Papers
* NASA Invites Public to Take Flight With Ingenuity Mars Helicopter
* Changes to AMSAT-NA TLE Distribution for April 8, 2021
* Busy month of crew rotations on tap at International Space Station
* ARISS News
* Upcoming Satellite Operations
* Hamfests, Conventions, Maker Faires, and Other Events
* Satellite Shorts From All Over

ANS-101 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 101.01
To: All RADIO AMATEURS
From: Radio Amateur Satellite Corporation
712 H Street NE Suite 1653
Washington, DC 20002

DATE 2021 April 11

ARISS-USA Now a Non-profit Organization

ARISS-USA, a Maryland not-for-profit corporation, is now recognized by the United States Internal Revenue Service as a Section 501(c)(3) charitable, scientific, and educational organization. ARISS-USA is the US segment of the ARISS (Amateur Radio on the International Space Station) international working group. With this IRS determination, donations to ARISS-USA become tax-deductible in the US, retroactive to the ARISS-USA incorporation on May 21, 2020. This change in status allows ARISS-USA to solicit donations and grants.

As a new entity, ARISS-USA will continue to promote student involvement with the astronauts on the International Space Station via amateur radio.

Working with educational organizations, ARISS provides exciting opportunities to inspire, engage and educate our next generation of space explorers through STEAM (science, technology, engineering, arts and math) activities and content. ARISS-USA Executive Director, Frank Bauer, commented, “The educational scope and reach of what ARISS accomplishes has grown significantly since our beginnings in 1996. We are actively working to extend student’s reach even further. This, through the pursuit of potential student opportunities on human spaceflight missions beyond low Earth orbit, as part of our Amateur Radio Exploration (AREx) Program. First AREx destination: the Moon!”

ARISS-USA continues its collaborative work with ARISS International and US sponsors, partners, and interest groups. The ARISS-USA TEAM remains deeply indebted to its partners ARRL and AMSAT, who enabled the birth of ARISS, and to its steadfast sponsors, NASA Space Communication and Navigation (SCaN) and the ISS National Lab (INL).

Gifts from those wishing to support ARISS-USA goals are tax-deductible to the extent allowed by law and can be made by going to the ARISS website: www.ariss.org The ARISS-USA team thanks its sustaining donors for their continuing support!

(ANS thanks Dave Jordan, AA4KN, of ARISS PR for the above information)

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categories include:
• SAT Single operator – Satellite QSOs
• SAT-GS Single operator – Geostationary Satellite QSOs

Contest rules are at http://gc.qst.ru/en/section/32

[ANS thanks AMSAT-UK for the above information]

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ANTELSAT - NORAD Cat ID 40034
VELOX-1 - NORAD Cat ID 40057
DAURIA DX 1 - NORAD Cat ID 40071
CHUBUSAT-1 - NORAD Cat ID 40300
QSAT-EOS - NORAD Cat ID 40301
GRIFEX - NORAD Cat ID 40379
DEORBITSAIL - NORAD Cat ID 40719
NUDT-PHONESAT - NORAD Cat ID 40900
LQSat - NORAD Cat ID 40958
OUFTI-1 - NORAD Cat ID 41458
Swayam - NORAD Cat ID 41607
AlSat 1N - NORAD Cat ID 41789
ScatSat - NORAD Cat ID 41790
Pegasus-1 - NORAD Cat ID 41846
UCLSat - NORAD Cat ID 42765
LituanicaSAT 2- NORAD Cat ID 42768

The above objects are inactive and have been removed. If you think a satellite is still active contact Ray Hoad, WA5QGD on AMSAT-BB.

[ANS thanks Ray Hoad, WA5QGD, AMSAT Orbital Elements Manager, for the above information]

Busy month of crew rotations on tap at International Space Station

Seven astronauts and cosmonauts are gearing up for launches April 9 and April 22 to the International Space Station, replacing seven outgoing crew members set to land in Kazakhstan and off the coast of Florida on April 17 and April 28.

The back-to-back crew rotations will make for a busy month on the orbiting research complex, and multiple instances when ARISS operation will be suspended during crew operations. Preparations for the arrival of the fresh crew members are already underway on the space station.

The first step was relocation of a SpaceX Crew Dragon spaceship to a new docking port on the space station April 5. NASA astronaut Mike Hopkins, KF5LJG, commander of the Crew Dragon “Resilience” spaceship, was joined by crewmates Victor Glover, KI5BKC, Soichi Noguchi, KD5TVP, and Shannon Walker, KD5DXB, for the fully automated 45-minute relocation maneuver.

The Dragon astronauts, who launched Nov. 15 as part of SpaceX’s “Crew-1” mission, were aboard the Crew Dragon Resilience spacecraft and suited up for re-entry, just in case the capsule had trouble linking up with the new docking port and needed to return to Earth.

Next was the launch of a Russian Soyuz MS-18 spacecraft with commander Oleg Novitskiy, cosmonaut Pyotr Dubrov, and NASA astronaut Mark Vande Hei, KG5GNP. The Soyuz crew launched from the Baikonur Cosmodrome in Kazakhstan on Friday, April 9 at 3:42 a.m. EDT (0742 GMT).

The crew on the space station will temporarily swell to 10 people until the outgoing Soyuz MS-17 crew departs the research lab one week later.

Undocking of the Soyuz MS-17 spacecraft with commander Sergey Ryzhikov, flight engineer Sergey Kud-Sverchkov, and NASA astronaut Kate Rubins, KG5FYJ, is scheduled for 9:33 p.m. EDT on April 16 (0133z on April 17). The Soyuz capsule is scheduled to parachute to a landing on the steppes of Kazakhstan at 12:56 a.m. EDT (0456 GMT) on April 17. Ryzhikov, Kud-Sverchkov, and Rubins launched Oct. 14 from Baikonur. Their return to Earth on April 17 will wrap up a 185-day mission.

With the Soyuz crew rotation complete, SpaceX and NASA will be cleared to launch the second operational Crew Dragon mission to the space station on April 22.

NASA astronaut Shane Kimbrough, KE5HOD, pilot Megan McArthur, Japanese astronaut Akihiko Hoshide, KE5DNI, and French-born European Space Agency astronaut Thomas Pesquet, KG5FYG, will fly on the Crew-2 mission.

Assuming the Crew-2 mission takes off April 22, Kimbrough and his crewmates will reach the space station for an automated docking at 5:29 a.m. EDT (0929 GMT) on April 23.

Their arrival will start a five-day handover with the Crew-1 astronauts, when the space station will briefly host 11 crew members.

The Crew-1 astronauts are scheduled to board their Crew Dragon Resilience spacecraft and undock from the space station April 28 at 5 a.m. EDT (0900 GMT). The Crew Dragon capsule will fire its Draco thrusters to target a parachute-assisted splashdown off the coast of Florida at 12:35 p.m. EDT (1635 GMT) the same day.

[ANS thanks Stephen Clark of Spacefilight Now for the above information]

ARISS NEWS

Amateurs and others around the world may listen in on contacts between amateurs operating in schools and allowing students to interact with astronauts and cosmonauts aboard the International Space Station. The downlink frequency on which to listen is 145.800 MHz worldwide.

Recent ARISS contacts:

The School of Information Technology & Mathematical Sciences, Southern Hemisphere Space Studies Program 2021, Mawson Lakes, SA, Australia, conducted a telebridge via IK1SLD on Tuesday, April 6. Shannon Walker, KD5DXB, was the astronaut. The contact was successful.

Gagarin From Space performed an amateur radio session with NILAK DOSAAF Llc in Kaluga, Kaluga Regional schools, Kaluga, Russia, direct contact via RK3X on April 6. Cosmonaut Sergey Kud-Sverchkov participated. The contact was successful.

Gagarin From Space conducted a radio amateur session with students of the St. Petersburg school, St. Petersburg, Russia, direct via R1AIT on April 7. The contact was successful.

Upcoming contacts: TBD

The latest information on the operation mode of the ARISS modules can be found at https://www.ariss.org/current-status-of-iss-stations.html

[ANS thanks Charlie Sufana, AJ9N, one of the ARISS operation team mentors for the above information]

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engineering, and math (STEM) concepts in areas such as telecommunications, spacecraft design, atmospheric and climate science, and orbital mechanics. (ANS thanks NASA, JoAnne Maenpaa, K9JKM, Harry Bloomberg, W3YJ, and Rick Lindquist, WW1ME, for the above information.)

+ Jean Marc Momple, 3B8DU and an AMSAT Ambassador published an article in the Institution of Engineers Mauritius (IEM) Journal, March 2021, to promoted HAM radio satellite operation worldwide, as the paper was circulated in all affiliated Engineers association globally but the focus was on the regional operation. The link to obtain the document is https://bit.ly/3uHFFCv or go to https://www.iemauritius.com and register to download the March 21 edition of the Journal. (ANS thanks Jean Marc Momple, 3B8DU, for the above information.)

+ GOES-T, NOAA’s latest generation geosynchronous satellite, recently completed vibration, vacuum, and acoustic testing ahead of its December launch. GOES-T packs upgraded traditional weather observation instruments (see https://www.youtube.com/watch?v=8WQAwQ0SGkc for a video intro), including the 16 channel ABI imager (up from 5 channels on the previous generation) with 0.5km - 2km resolution (4x the previous gen). This generation also includes a Geostationary Lightning Mapper, the first lightning mapping system flown in geostationary orbit, which should increase lead time for severe storm warnings and decrease false positives. See https://www.goes-r.gov/spacesegment/glm.html for an overview of the system. (ANS thanks the Orbital Index for the above information.)

+ SpaceX launched 60 more of the company's Starlink Internet communications satellites into orbit from Florida on Wednesday, April 7. A Falcon 9 rocket carrying the spacecraft lifted off as planned at 12:34 p.m. EDT (16:34z). SpaceX recovered the first-stage booster for the rocket by landing it on a barge in the Atlantic Ocean. The satellites deployed to their intended orbit a little more than an hour after launch. (ANS thanks Space Daily for the above information.)

+ A rather fascinating disassembly and analysis of the digital clock from a Soyuz spacecraft can be found at http://www.righto.com/2020/01/inside-digital-clock-from-soyuz.html The mid-1980s vintage clock was judged to be 8 to 10 years behind U.S. space technology of the time, with more that 100 integrated circuits on ten circuit boards. (ANS thanks the Orbital Index for the above information.)

+ Open Research Institute has posted several new YouTube videos updating their work. See https://www.openresearch.institute/ for links. (ANS thanks AMSAT Board Member Michelle Thompson, W5NYV, for the above information.)

+ AO-91 remains operational in COR or "repeater mode." Reminder: Please use only in sunlight and do not use while in eclipse (which "generally" means, if it's dark at your local QTH do not use!). Remember that the current status of most operational satellites can be found at https://www.amsat.org/status/ (ANS thanks AMSAT Board and Fox Command Team Member Mark Hammond, N8MH, for the above information.)

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Store.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled

in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact info [at] amsat.org for additional student membership information.

73 and Remember to help keep amateur radio in space,
This week's ANS Editor, Mark Johns, K0JM
k0jm at amsat dot org